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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/064,154	06/14/2002	Ronald G. Fink	6556.4814	5102
39670	7590	11/23/2005	EXAMINER	
BOC, INC. 575 MOUNTAIN AVE MURRAY HILLS, NJ 07974-2064			MAYEKAR, KISHOR	
			ART UNIT	PAPER NUMBER
			1753	
DATE MAILED: 11/23/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/064,154	FINK ET AL.	
	Examiner	Art Unit	
	Kishor Mayekar	1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Oct. 10, 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1 and 3-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>10/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on October 14, 2005 has been entered.

Allowable Subject Matter

2. The indicated allowability of claims 1 and 3-22 is withdrawn in view of the newly discovered reference(s) to Heller et al. (US 5,616,532), Say et al. (US 5,790,934), Owesen (US 5,891,399) and Saitou (US 2001/0052237 A1). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

In claim 14, the same is applied to claim 1.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 4-16 and 18-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Say et al. (US 5,790,934) in view of Owesen (US 5,891,399). Say's invention is directed a device for photocatalytic purification and a method thereof. Say discloses in Figs. 1, 2, 5 and 11 that the device comprises the recited casing, means for moving air, a target and elongated UV light source and the recited steps in the method thereof, wherein the target comprises fin with photocatalyst disposed on fin surfaces (col. 3, lines 58-66), the photocatalyst is titanium dioxide and cocatalyst included silver and copper may be in conjunction with the photocatalyst (col. 5, lines 52-65). In the Examples, Say discloses the presence of water in air, hence the radicals are inherently generated. The differences between Say and the above claims are the wall mounting of the device and the detailing of the amount of the cocatalyst.

As to the first difference, Owesen shows in a device for air purification wherein the device is suitable for ceiling mounting, wall mounting, stand-alone unit (col. 2, lines 1-5). The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Say's teachings as shown by Owesen because the motivation to make a specific structure is always related to the properties or uses one skilled in the art would

expect the structure to have, *In re Newell* 13 USPQ 2d 1248, *Fromson v. Advance Offset Plate* 225 USPQ 26; *In re Gyurik* 201 USPQ 552.

As to the second difference, although Say does not detail the amount of the cocatalyst disposed with the photocatalyst. The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Say's teachings because it has been settled that proper adjustment of a known effective variable of a known or obvious process is within the capabilities of one having ordinary skill in the art. *In re Aller* 105 USPQ 233; *In re Boesch* 205 USPQ 215.

As to the subject matter of claim 4, Say discloses that the target can be porous material (col. 3, line 62 through col. 4, line 8).

As to the subject matter of claim 5, Say discloses in Example the use of UV light emitting 254 nm.

As to the subject matter of claim 6, Say discloses the target with a surface of reflective material that scatters or reflects light and of porous material (col. 3, line 66 through col. 4, line 8),

As to the subject matter of claims 8 and 9, Say discloses in Fig. 5.

As to the subject matter of claim 10, the motivation to make a specific structure is always related to the properties or uses one skilled in the art would expect the structure to have, *In re Newell* 13 USPQ 2d 1248, *Fromson v. Advance Offset Plate* 225 USPQ 26; *In re Gyurik* 201 USPQ 552.

As to the subject matter of claims 11-13, Say discloses it in col. 6, lines 40-43).

As to the recited high UV light source capable of generating ozone, in the independent claim 14, first since Say discloses the use of low-pressure mercury UV light emitting 254 nm to illuminate the photocatalyst and secondly since Say discloses an ozone generator may be use in conjunction with the air purification device, wherein the photocatalyst-activating lamp can be used in the ozone generator (col. 7, lines 56-65), Say discloses such the limitation.

As to the subject matter of claim 16, Say discloses it in an embodiment of Fig. 12.

7. Claims 3 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Say '934 as modified by Owesen '399 as applied to claims 1, 4-16 and 18-22 above, and further in view of Heller et al. (US 5,616,532) and/or Saitou (US

2001/0052237 A1). Say as applied above further discloses the deposition of the photocatalyst on the target by use of a binder (col. 6, lines 15-24). The difference between the references as applied above and the instant claims is the recited target comprising a hydration compound of silica gel. Heller, a reference disclosed in Say in the above column's teachings, shows the use of binder of a hydrated silica (col. 5, lines 65-67) and silica gel (col. 6, lines 48-49). Saitou shows the deposition of titanium dioxide on silica gel in a device for removing odor producing ingredients by the use of photocatalyst [0029] and that the silica gel contains water by the absorbing of moisture [0031]. The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the references' teachings as shown by Heller and/or Saitou because the selection of any of known equivalent binders to secure the photocatalyst to the target would have been within the level of ordinary skill in the art and further of the inherent property of the silica gel to absorb moisture from the surrounding.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kishor Mayekar whose telephone number is (571) 272-1339. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kishor Mayekar
Primary Examiner
Art Unit 1753